

REMARKS

Claims 1-20 are pending in the present Application. By this Amendment, new claims 21 and 22 have been added. Accordingly, claims 1-22 are currently at issue.

I. Rejections Under 35 U.S.C. § 103

In the Office Action, claims 1-6, 8-12, and 14-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,863,669 to Miller ("Miller") in view of U.S. Patent Application Publication No. 2003/0155409 to Dockus et al. ("Dockus"). Additionally, claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller and Dockus, in view of U.S. Patent No. 4,929,511 to Bye et al. ("Bye"). Further, claim 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller and Dockus, in view of U.S. Patent No. 6,234,377 to Teshima et al. ("Teshima"). Applicant respectfully traverses these rejections.

A. Claims 1-6 and 8-12

Claim 1, as amended, recites that "an aluminum brazing alloy coated as a single coating on at least one face of the core alloy ... including 4% to 15% of silicon and 0.01% to 0.5% of at least one element selected from the group consisting of Ag, Be, Bi, Ce, La, Pb, Pd, Sb, Y or mischmetal." The Office Action asserts that Miller discloses a brazing material that has only a single coating of a brazing alloy thereon and that Dockus teaches the addition of Bi, Pb, Li, or Sb to a brazing clad layer. However, even if the Examiner is correct, Applicant submits that the Examiner is incorrect that it would be obvious to arrive at the claimed invention. Dockus only discloses brazing material that has an additional "braze-promoting layer" along with a brazing clad layer, and its teachings are only applicable to brazing sheets of that type. Dockus teaches that the addition of Bi, Pb, Li, or Sb is beneficial in connection with the braze-promoting layer, by eliminating the need for lead as an alloying addition in the braze-promoting layer (which is more difficult and expensive due to the electroplating process used to deposit the braze-promoting layer). (Dockus, Par. 112). Dockus does not teach any benefits to the addition of Bi, Pb, Li, or Sb that would be applicable to a brazing material that did not contain a braze-promoting layer. Thus, one skilled in the art, upon reading Dockus, would not apply its teachings to a brazing sheet that did not include a braze-promoting layer.

Additionally, Dockus teaches the use of the braze promoting layer for fluxless, controlled atmosphere brazing. Miller, on the other hand, does not disclose that its braze material can be used in fluxless brazing techniques. Accordingly, if one skilled in the art would look to Dockus for modifying the disclosed brazing material to be suitable for fluxless brazing techniques, they would be led to include the braze-promoting layer. Again, Dockus does not provide any teaching that would indicate that the disclosed brazing material is useful without the incorporation of the braze-promoting layer. Thus, for this additional reason, one skilled in the art would not apply the teachings of Dockus to a brazing sheet that did not include a braze-promoting layer.

Applicant respectfully submits that Dockus cannot be combined with Miller unless the teachings of Dockus are completely ignored, except for portions that are selectively picked out for the sole purpose of proving Applicant's invention obvious. Accordingly, no *prima facie* case of obviousness exists with respect to claim 1.

Claims 2-6 and 8-12 depend from claim 1 and include all the elements of claim 1. Thus, for the reasons stated above with respect to claim 1, no *prima facie* case of obviousness exists with respect to claims 2-6 and 8-12.

B. Claim 7

Claim 7, via dependency from claim 1, includes the element, "an aluminum brazing alloy coated as a single coating on at least one face of the core alloy ... including 4% to 15% of silicon and 0.01% to 0.5% of at least one element selected from the group consisting of Ag, Be, Bi, Ce, La, Pb, Pd, Sb, Y or mischmetal." As described above with respect to claim 1, the proposed combination of Miller and Dockus does not render claim 1 obvious. The addition of Bye does not remedy the deficiencies in the rejection of claim 1. Thus, no *prima facie* case of obviousness exists with respect to claim 7.

C. Claim 13

Claim 13, via dependency from claim 1, includes the element, "an aluminum brazing alloy coated as a single coating on at least one face of the core alloy ... including 4% to 15% of silicon and 0.01% to 0.5% of at least one element selected from the group consisting of Ag, Be,

Bi, Ce, La, Pb, Pd, Sb, Y or mischmetal.” As described above with respect to claim 1, the proposed combination of Miller and Dockus does not render claim 1 obvious. The addition of Teshima does not remedy the deficiencies in the rejection of claim 1. Thus, no *prima facie* case of obviousness exists with respect to claim 13.

D. Claims 14-18

Claim 14, as amended, recites, among other elements, “coating one or more plates with a single coating consisting of a cladding alloy comprising between 4% to 15% by weight silicon and 0.01% to 0.5% by weight of at least one element selected from the group consisting of Ag, Be, Bi, Ce, La, Pb, Pd, Sb, Y or mischmetal.” This element is similar to the element recited above with respect to claim 1. Thus, for the same reasons stated above with respect to claim 1, no *prima facie* case of obviousness exists with respect to claim 14.

Additionally, claim 14 recites, among other elements, “subjecting the one or more plates to fluxless brazing under controlled nitrogen and/or argon atmosphere at a temperature of between 580°C and 620°C.” As described above with respect to claim 1, Dockus cannot be properly combined with Miller to create a brazing material for fluxless brazing that does not include an additional braze-promoting layer. Thus, for this additional reason, no *prima facie* case of obviousness exists with respect to claim 14.

Claims 15-18 depend from claim 14 and include all the elements of claim 14. Thus, for the same reasons stated above with respect to claim 14, Dockus cannot anticipate claims 16-18.

E. Claims 19-20

Claims 19 and 20, as amended, both recite, among other elements, “an aluminum brazing alloy coating at least one face of the core alloy, wherein the brazing alloy occupies an entire thickness between the core alloy and a respective outer surface of the brazing sheet, the brazing alloy comprising (% by weight): 4% to 15% of silicon and 0.01% to 0.5% of at least one element selected from the group consisting of Ag, Be, Bi, Ce, La, Pb, Pd, Sb, Y or mischmetal.” Accordingly, claims 19 and 20 exclude any brazing material that contains an additional braze-promoting layer with the brazing clad. As described above with respect to claim 1, the teachings of Dockus are only applicable to brazing materials that include a core, a clad layer, and an

additional braze-promoting layer. Thus, for the same reasons stated above with respect to claim 1, no *prima facie* case of obviousness exists with respect to claims 19-20.

II. New Claims

New claims 21 and 22 have been added to the present Application by this Amendment. Applicant submits that new claims 21 and 22 are patentable over the references cited in the present Office Action, for the reasons briefly described below.

Claims 21 and 22 depend from claim 1 and include all the elements thereof. Thus, for at least the reasons stated above with respect to claim 1, new claims 21 and 22 are patentable over the cited references.

CONCLUSION

In view of the foregoing, Applicant respectfully requests reconsideration of the Examiner's rejections and allowance of claims 1-20 in the present Application. Applicant also respectfully requests examination and allowance of new claims 21 and 22. Applicant submits that the Application is in condition for allowance and respectfully requests an early notice of the same.

Respectfully submitted,

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